REMARKS

Claims 20 and 21 are amended herein; in the Amendment Under 37 C.F.R. 1.116 filed on November 24, 2004, claims 23-25 were amended and claim 9 was canceled. Claims 1-8, 10-29 and 31-34 are pending. Reconsideration of this application, as amended, is requested.

Applicants believe the Section 112 rejections have been addressed by the Amendment Under 37 C.F.R. 1.116.

According to the Advisory Action, claims 1-8, 10-29 and 31-34 remain rejected under 35 U.S.C. 103(a) as unpatentable over Hoopman et al ('248) in view of Abrahamson and also over Hoopman et al ('178) in view of Abrahamson. Applicants continue to disagree with these rejections.

The teachings of Hoopman '248 and Hoopman '217 have been discussed in the Amendment Under 37 C.F.R. 1.116 and the Amendment dated July 12, 2004. These references are directed to abrasive articles having abrasive composites that comprise abrasive particles in a radiation curable binder. The disclosure of the references was discussed in Applicants' previous paper. The '248 and '217 patents provide abrasive articles that provide both high cut rate and fine finish.

The current application, however, goes farther than the '248 and '217 patents, in that the current Applicants have obtained an abrasive article that does not experience the usual decrease in cut rate performance over time, as is seen in the '248 and '217 patents, and thus resulting in a greater total cut. It is the combination of the large (i.e., at least 85 micrometer) ceramic abrasive particles in a large topography (i.e., at least 500 micrometers) that provides improved cut performance over time. Such is recited in the pending claims. The performance is specifically called out in the independent claims in the various "wherein" clauses.

Submitted with this paper is a declaration by James McArdle, a named inventor of this application. Provided in the Declaration are various new abrasive article examples and their grinding test results. The results in the Declaration show that the combination of the three specific features, the ceramic abrasive particles with a size of at least 85 micrometers in composites having a height of greater than 500 micrometers, provide abrasive cutting results

which are improved over the prior art. See paragraphs 13, 14 and 15 of the Declaration for detailed discussion of the test result comparisons. Example D4 specifically uses the same topography as Examples 1, 1A and 2 of the Hoopman '248 reference.

The results in the Declaration, and the discussion by Mr. McArdle in the Declaration, show that the combination of the three specific features, the ceramic abrasive particles with a size of at least 85 micrometers in composites having a height of greater than 500 micrometers, provide abrasive cutting results which were unexpected. Examples that specifically fall within the abrasive article definition of the pending claims include Examples, 3, 10 and D3.

Many of the pending claims of the present application go farther than merely reciting the abrasive article structure. Pending independent claims 1, 14, 18, 19, 20, and 21 also recite a grinding test result for the abrasive article.

For claims 1 and 14, the requirement generally is that the abrasive article produces a cut rate at least 20 minutes after the first cut rate that is no greater than 50% less than the first cut rate. Each of Examples 3, 10 and D3 meet this criterion. For claim 18, when using Test Procedure I, the cut rate at Cycle 240 is no greater than 15% less than the cut rate at Cycle 1. None of the examples discussed in the Declaration were tested under Test Procedure I.

For claim 19, when using Test Procedure II, the cut rate at Cycle 12 is no greater than 50% less than the cut rate at Cycle 1. Example 3 meets this criterion. For claim 20, when using Test Procedure III, the cut rate at Cycle 60 is no greater than 30% less than the cut rate at Cycle 1. Examples 10 and D3 meet this criterion.

For claim 21, when using Test Procedure III, the cut rate decrease over 60 cycles is no greater than 50% of a fused aluminum oxide abrasive article's cut rate decrease. Examples 10 and D3 meet this criterion, as both provide greater cut rate than Comparative Example E (which was, however, tested to only 30 cycles).

The examples provided, and the Declaration by Mr. McArdle, show that the recited combination of the three features provides an abrasive article that does not experience the usual decrease in cut rate performance over time, thus resulting in a greater total cut over abrasive articles not within the claimed parameters. This combination of the three features also provides an abrasive article that has a faster instantaneous cut rate after a set number of cycles, thus also resulting in a greater total cut. Applicants contend that it would not have been obvious that the

specific combination would be able to provide such improved grinding results over other abrasive articles that do not have those features.

Abrahamson does not remedy the missing teaching of the '248 and '217 patents, that of the improved performance results obtained with the specific element combination. Abrahamson teaches that rare earth oxide modified ceramic abrasive particles can be used in abrasive composites.

Applicant s contend that the claims, as amended, are patentable, and request withdrawal of the rejections.

Summary

In view of the above amendments and remarks, Applicants respectfully request a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone Applicants' attorney Rick L. Franzen, Reg. No. 51,702, at 651.736.6432.

Respectfully submitted,

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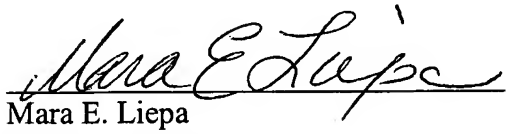

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